

component feed source, said pick head having access to said component feed source, said movable pick head supported to retrieve <sup>said</sup> a component from said component feed source and place the retrieved component in one of a plurality of alignment orientations including a predetermined fiducial alignment orientation in a plane and another alignment orientation which is 90° from the predetermined fiducial alignment orientation in the plane; and

D4  
(a fiducial alignment detector) comprising (a receiver) connected to said controller, wherein said controller contains instructions which, when executed by said controller, cause said controller to compare a detected fiducial alignment orientation of the retrieved component with the predetermined fiducial alignment orientation to determine whether the retrieved component is in said predetermined fiducial alignment orientation.--

#### REMARKS

##### 1. Status of the Application

Claims 30-37 and 44-52 and 61-75 are pending in the application. Claims 45-47, 52, 63, 65, 66, 68, 69 and 73 were withdrawn from consideration.

Claims 30-37, 44, 48-51, 61, 62, 64, 67, 72, 74 and 75 stand rejected.

In this amendment, claims 74 and 75 were cancelled without prejudice. New claim 76 was added. Claims 30, 44, 61, 64 and 72 were amended.

##### 2. Claim Rejections - 35 USC §112

Claims 30-37, 44, 48-51, 61, 62, 64, 67, 72 and 74-75 stand are rejected under 35 USC §112, first and second paragraphs. The Office Action provides that the "disclosure fails to provide support for uniquely distinguishing between symmetric alignments of the leads" and that this limitation "renders the claims vague and indefinite". Applicant continues to disagree. Nevertheless, to advance the subject application to allowance, Applicant has amended the independent claims 30, 44, 61, 64 and 72 to remove the language "uniquely distinguishing between symmetric alignments ". Applicant has further amended these claims to add in the preamble that the component transfer apparatus transfers a component having at least two sides

that are substantially parallel to each other and that each have an equivalent number of leads protruding therefrom and to further recite that the movable pick head is supported to retrieve a component from the component feed source and place the retrieved component in one of a plurality of alignment orientations including a predetermined fiducial alignment orientation in a plane and another alignment orientation which is 180° from the predetermined fiducial alignment orientation in the plane. Support for these amendments can be found in Figures 1(a) and throughout the specification, for example, p. 2, lines 24-35, p. 3, lines 7-15, and 23-34, p. 4, lines 10-14, p. 6, line 33-p. 6, line 7, p. 8, lines 28-31, p. 25 , lines 25-28. No new matter has been added.

Added claim 76 is similar to amended claim 30, but it is written for components that have a **first pair** of sides that are substantially parallel to each other and that each have an equivalent number of leads protruding therefrom and a **second pair** of sides that are substantially parallel to each other and that each have an equivalent number of leads protruding therefrom. Claim 76 finds additional support in Fig. 1(b) and p. 3, lines 1-6 of the specification.

Applicant submits that, as discussed above, the specification "reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter" and that the "subject matter of the claim need not be described literally (i.e. using the same terms or *in haec verba*) in order for the disclosure to satisfy the description requirement." MPEP 2163.02. Moreover, the claims as amended are definite and particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Accordingly, withdrawal of all the §112 rejections is respectfully requested.

### 3. Conclusion

Applicant submits that all of the pending claims are in condition for allowance. Accordingly, reconsideration and passage to allowance of the subject application at an early date are earnestly solicited. If the undersigned can be of assistance in advancing the subject

application to allowance, the Examiner may contact the undersigned at the telephone number set forth below.

Respectfully submitted,



---

Maria Comninou  
Registration No. 44,626  
Attorney for Applicant

Kirkpatrick & Lockhart LLP  
Henry W. Oliver Building  
535 Smithfield Street  
Pittsburgh, PA 15222  
Telephone: (412) 355-6583  
Fax: (412) 355-6501

**Version With Markings to Show Changes Made in 09/466,521**

**In the claims**

Claims 30, 44, 61, 64, and 72 were amended as follows:

30. (Four Times Amended) A component transfer apparatus for transferring a component having at least two sides that are substantially parallel to each other and that each have an equivalent number of leads protruding therefrom, said apparatus comprising:

a pick and place machine including a controller connected to a movable pick head and a component feed source, said pick head having access to said component feed source, said movable pick head supported to retrieve a component from said component feed source and place the retrieved component in one of a plurality of alignment orientations including a predetermined fiducial alignment orientation in a plane and another alignment orientation which is 180° from the predetermined fiducial alignment orientation in the plane; and

a fiducial alignment detector comprising a receiver [directed toward said feed source and] connected to said controller, wherein said controller contains instructions which, when executed by said controller, cause said controller to compare a detected fiducial alignment orientation of the retrieved component with [a] the predetermined fiducial alignment orientation [that uniquely distinguishes between symmetric alignments of the leads] to determine whether the retrieved component is in said predetermined fiducial alignment orientation.

44. (Thrice Amended) A component transfer apparatus for transferring a component having at least two sides that are substantially parallel to each other and that each have an equivalent number of leads protruding therefrom, said apparatus comprising:

a pick and place machine having a component feed source and a movable pick head having access to said component feed source, said moveable pick head supported to retrieve a component from said component feed source and place the retrieved component in one of a plurality of alignment orientations including a predetermined fiducial alignment orientation in a plane and another alignment orientation which is 180° from the predetermined fiducial alignment orientation in the plane;

a fiducial alignment detector directed toward said component feed source; and

a controller coupled to said fiducial alignment detector and containing instructions which, when executed by said controller, cause said controller to compare a detected fiducial alignment orientation of the retrieved component with [a] the predetermined fiducial alignment orientation [that uniquely distinguishes between symmetric alignments of the leads] to determine whether the retrieved component is in said predetermined fiducial alignment orientation.

61. (Thrice Amended) A component transfer apparatus for transferring a component having at least two sides that are substantially parallel to each other and that each have an equivalent number of leads protruding therefrom, said apparatus comprising:

a pick and place machine having a component feed source and a movable pick head having access to said component feed source, said moveable pick head supported to retrieve a component from said component feed source and place the retrieved component in one of a plurality of alignment orientations including a predetermined fiducial alignment orientation in a plane and another alignment orientation which is 180° from the predetermined fiducial alignment orientation in the plane;

a fiducial alignment detector directed toward said component feed source and having an alignment signal output; and

a controller coupled to said detector alignment signal output and containing instructions which, when executed by said controller, cause said controller to compare a detected fiducial alignment orientation of the retrieved component with [a] the predetermined fiducial alignment orientation [that uniquely distinguishes between symmetric alignments of the leads] to determine whether the retrieved component is in said predetermined fiducial alignment orientation.

64. (Thrice Amended) A component transfer apparatus for transferring a component having at least two sides that are substantially parallel to each other and that each have an equivalent number of leads protruding therefrom, said apparatus comprising:

a pick and place machine having a component feed source and a movable pick

head having access to said component feed source, said moveable pick head supported to retrieve a component from said component feed source and place the retrieved component in one of a plurality of alignment orientations including a predetermined fiducial alignment orientation in a plane and another alignment orientation which is 180° from the predetermined fiducial alignment orientation in the plane;

    a fiducial alignment detector directed toward said component feed source and having an alignment signal output; and

    a controller coupled to said detector alignment signal output and containing instructions which, when executed by said controller, cause said controller to compare a detected fiducial alignment orientation of the retrieved component with [a] the predetermined fiducial alignment orientation [that uniquely distinguishes between symmetric alignments of the leads] to determine whether the retrieved component is in said predetermined fiducial alignment orientation, and cause said movable pick head to pick a component from said component feed source.

72. (Thrice Amended) A component transfer apparatus for transferring a component having at least two sides that are substantially parallel to each other and that each have an equivalent number of leads protruding therefrom, said apparatus comprising:

    a pick and place machine having a component feed source and a movable pick head having access to said component feed source, said moveable pick head supported to retrieve a component from said component feed source and place the retrieved component in one of a plurality of alignment orientations including a predetermined fiducial alignment orientation in a plane and another alignment orientation which is 180° from the predetermined fiducial alignment orientation in the plane;

    a fiducial alignment detector directed toward said component feed source and having an alignment signal output; and

    a controller coupled to said detector alignment signal output and containing instructions which, when executed by said controller, cause said controller to compare a detected fiducial alignment orientation of the retrieved component with [a] the predetermined fiducial alignment orientation [that uniquely distinguishes between symmetric alignments of the leads]

to determine whether the retrieved component is in said predetermined fiducial alignment orientation and cause said controller to advance said component feed source.

Claims 74 and 75 were cancelled.

Claim 76 was added.